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TWO NEW APHIDS OF THE TRIBE MACROSIPHINI*

A. N. TISSOT

The first of the two species described in this paper is a typical *Macrosiphum* while the second belongs to that large group of species feeding on the Composites and is being referred to the genus *Tritogenaphis.*

MACROSIPHUM MESOSPHAERI new species

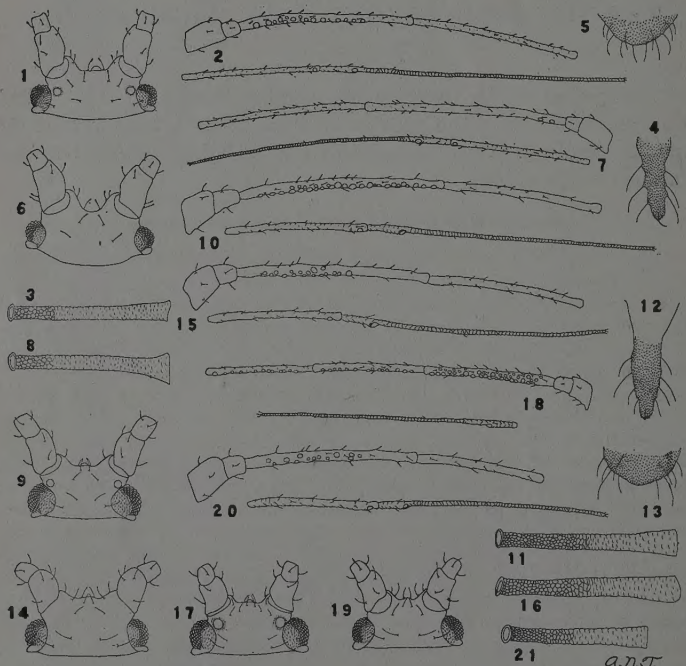
Alate viviparous female. (Plate I, figs. 1-5). Prevailing color yellowish-green. General form of the body long and rather narrow. Length, 2.56 mm. Head olive-brown, nearly twice as wide as long, with large prominent antennal tubercles. The front of the head and the antennal tubercles with short, curved hairs which are slightly capitate at the tip. Width of head through the compound eyes, .517 mm. Eyes reddish-brown, large, with prominent ocular tubercles. Ocelli small, bordered with very dark brown. Antennae six-segmented, considerably longer than the body. The first two segments and a small basal portion of the third, dusky or light brown, the remainder of the antenna jet black. The first segment more than twice as long as, and considerably wider than, the second. The first two segments, and most of the third, smooth. The apical portion of the third, and the remaining segments faintly imbricated. All the segments armed with a few short, hyaline hairs, slightly spatulate at the apex. Third segment of the right antenna with 14 sensoria, the corresponding segment of the left antenna with 16 sensoria. These sensoria are arranged in a single more or less straight row, are nearly circular in outline and vary considerably in size. Fourth segment of each antenna without sensoria, the fifth with the usual terminal one and the sixth with one large and a few small sensoria at the base of the unguis. Length of the antennal segments as follows: I, .177 mm., II, .068 mm., III, .925 mm., IV, .843 mm., V, .680 mm., VI, base, .163 mm., unguis, 1.278 mm. Rostrum brown, with extreme tip black; reaching to the second coxae.

Thorax yellowish-green tinged with brown. Lobes pale yellowish-brown, wing insertions yellow. The prothorax slightly wider than the head, without lateral tubercles. Wings hyaline, the veins dark brown, the stigma dusky with a greenish cast. Fore wing with radial sector present, rather long. Media twice-branched, the distance from the second fork to the

* Contribution from Department of Entomology, Florida Agricultural Experiment Station. Published June 30, 1934.

margin of the wing about equal to the distance between the first and second forks. Hind wing with two oblique veins. Legs with the femora pale green at the base and gradually getting darker toward the apex which is dark brown. Tibiae and tarsi entirely very dark brown or black. The spines on the femora and bases of the tibiae slightly spatulate, those of the apical portions of the tibiae and on the tarsi pointed.

Abdomen yellowish-green with a darker bright green irregular band extending along the mid-dorsal line. Along each lateral margin four dusky, almost circular spots. Cornicles black. Widest at the base and



Explanation of Plate I

Macrosiphum mesosphaeri n. sp.

Figs. 1-5—Alate viviparous female: 1, head; 2, antenna; 3, cornicle; 4, cauda; 5, anal plate.

Figs. 6-8—Apterous viviparous female: 6, head; 7, antenna; 8, cornicle.

Tritogenaphis eupatorifoliae n. sp.

Figs. 9-13—Alate viviparous female: 9, head; 10, antenna; 11, cornicle; 12, cauda; 13, anal plate.

Figs. 14-16—Apterous viviparous female: 14, head; 15, antenna; 16, cornicle.

Figs. 17-18—Male: 17, head; 18, antenna.

Figs. 19-21—Oviparous female: 19, head; 20, antenna; 21, cornicle.

tapering somewhat toward the apex which is flared. Approximately one-fourth of the length reticulated, the remainder imbricated, the imbrications becoming fainter toward the base. Length .639 mm. Cauda and anal plate light brown. Cauda about half as long as the cornicles with a slight constriction about the middle. Three slightly curved pointed hairs on each side between the constriction and the apex and one dorsal hair near the apex. Anal plate rather sharply rounded with several curved hairs.

Apterous viviparous female. (Plate I, figs. 6-8). General color of head, thorax, and abdomen yellowish-green. Eyes reddish-brown with small ocular tubercles. Antennae situated on large, prominent tubercles, six-segmented, very much longer than the body. The first two segments yellowish-green or dusky, the remaining segments very dark brown or black. The first two segments and most of the third smooth, apex of the third and the remaining segments faintly imbricated. Third segment with two or three rather small circular sensoria situated near the base of the segment. All the segments armed with a few short, hyaline, slightly spatulate hairs. Rostrum brown with the apex black, reaching to the third coxae. Legs with the femora greenish at the base, gradually becoming darker toward the apex which is dark brown, tibiae and tarsi dark brown. Cornicles black. Widest at the base and tapering slightly toward the apex. About one-fourth of the length reticulated the remainder imbricated, the imbrications becoming more faint toward the base. Cauda and anal plate dusky. The form of these structures and the arrangement of the hairs as in the alate female.

Measurements of the apterous female as follows: length of body, 2.52 mm., width of head across the eyes, .476 mm., length of antennal segments, I, .163 mm., II, .068 mm., III, .884 mm., IV, .775 mm., V, .639 mm., VI, base, .177 mm., unguis, 1.238 mm., length of cornicles, .626 mm.

TYPE LOCALITY: Gainesville, Florida.

TYPES: Holotype alate viviparous female from *Mesophaerum pectinatum,* taken Nov. 7, 1928 (F 416-28). Morphotype apterous viviparous female same data as the holotype. These types deposited in the U. S. National Museum Collection, Cat. No. 44299. Paratypes, same data as the holotype in the collection of the Entomology Department, Florida Agricultural Experiment Station and in that of the author. Types selected from a series of twenty-four alate and six apterous viviparous females. Type material collected by the author.

NOTES: This aphid in general appearance resembles both *Macrosiphum pseudorosae* Patch and *M. gei* (Koch). Specimens were sent to Dr. Patch who expressed the opinion that this species is distinct from *pseudorosae.* The cornicles are much shorter than the third antennal segment and the unguis of the sixth segment is much longer than the third, whereas in *pseudorosae,* the cornicles, third antennal segment, and the unguis of the sixth segment are subequal. It differs from *M. gei* in having the cornicles relatively shorter and thicker, and the tibiae uni-

formly black instead of with dark extremities and lighter middle portion.

Measurements of ten alate females are as follows: length, 2.56-2.68 mm., width of head through the eyes, .476-.517 mm., length of antennal segments, III, .843-.925 mm., IV, .680-.843 mm., V, .598-.721 mm., VI, base, .150-.177 mm., unguis, 1.278-1.392 mm., third segment with 14-17 sensoria.

RECORDS: *Mesosphaerum pectinatum,* Gainesville, Nov. 7, 1928 (F 416-28).

TRITOGENAPHIS EUPATORIFOLIAE new species

Alate viviparous female. (Plate I, figs. 9-13). Prevailing colors of body, dark green and brown. Length 3.16 mm. Head dark dusky-green. Width much greater than the length, antennal tubercles large. Width across the compound eyes, .476 mm. Eyes reddish-brown, large with rather small ocular tubercles. Ocelli bordered with very dark brown. Antennae six-segmented slightly longer than the body. First two segments very dark brown, remaining segments black. First three segments smooth, last three faintly imbricated. First segment large, nearly twice as long and much wider than the second. Third segment longer than either the fourth or fifth, unguis of the sixth longer than the third. Third segment with approximately 30 sensoria scattered over more than half the surface of the segment. Fourth segment without sensoria, fifth with the usual one near the apex, sixth with one large and five small sensoria at the base of the unguis. Hairs of the head and antennae short, and spine-like, some of them with slightly spatulate tips. Length of antennal segments as follows: I, .136 mm., II, .082 mm., III, .789 mm., IV, .585 mm., V, .558 mm., VI, base, .136 mm., unguis, .952 mm. Rostrum dark brown, reaching to the second coxae.

Thorax dark green, the lobes yellowish-brown. Prothorax somewhat wider than the head, without lateral tubercles. Wing insertions yellowish-green. Wings hyaline, stigma and veins pale brown. Fore wing with radial sector long. Media twice-branched, the second fork nearer to the margin of the wing than to the first fork. Hind wing with two oblique veins. Legs with the basal portion of the femora pale greenish; the apical portion dark brown. Tibiae and the tarsi black. All segments of the legs armed with spine-like hyaline hairs.

Abdomen with anterior third and the lateral margins a very dark dull green mottled with lighter areas, middle portion reddish-brown with irregular darker markings. Lateral margins with hyaline hairs similar to those of the head and appendages. Cornicles black, widest at the base and tapering slightly toward the apex which is flared. Reticulated area extending about two-fifths the length of the cornicle. The portion below the reticulated area definitely imbricated, though the imbrications become fainter at the base. Length .680 mm. Cauda dark greenish-brown; long and narrow with a marked constriction below the middle; about three-fifths as long as the cornicles. Five long, slightly curved hairs on each side, two dorsal hairs, one above the middle and the other near the apex.

Anal plate dark brown, nearly semi-circular in outline, with several long hyaline hairs each arising from a raised circular base. The surface of the cauda slightly imbricated and covered with rows of minute points.

Apterous viviparous female. (Plate I, figs. 14-16). Head, thorax, and abdomen a dull, dark green mottled with lighter areas. Head with large diverging antennal tubercles and bearing several rather long, hyaline hairs. These hairs with somewhat flattened tips and each arising from a globe-like base. Eyes reddish-brown, large. Antennae six-segmented, longer than the body. First two segments greenish-brown, remaining segments very dark brown or black. First three segments smooth, remaining segments faintly imbricated. Third segment with 15-20 scattered, circular sensoria. Fourth segment without sensoria, the fifth with the usual one near the apex, the sixth with a group of one large and five or six small sensoria at the base of the unguis. Rostrum very dark brown, reaching to the third coxae.

Legs with bases of the femora greenish, the apical portion dark brown, tibiae dark brown, the apices black, tarsi black.

Cornicles black, widest at the base and tapering slightly toward the apex. The apical one-third reticulated, the portion below the reticulations definitely imbricated. Cauda dark dusky green, long and narrow with a definite constriction below the middle. Four long slightly curved hairs on each side, two or three shorter dorsal ones.

Measurements of the apterous female as follows: length 2.36 mm., width of head across the eyes, .476 mm., length of antennal segments, I, .136 mm., II, .068 mm., III, .816 mm., IV, .612 mm., V, .517 mm., VI, base, .136 mm., unguis, .938 mm., length of cornicles, .748 mm.

Male. (Plate I, figs. 17-18). Coloration of the male very similar to that of the alate viviparous female. Head with large antennal tubercles. Eyes dark reddish-brown, very large with large ocular tubercles. Antennae six-segmented, considerably longer than the body. Rostrum reaching to the third coxae. Cornicles subcylindrical, wider at the base and tapering slightly to the apex. About one-third the length reticulated, the remaining portion very strongly imbricated. Cauda with slight constriction, and armed with numerous slightly curved hairs.

Measurements of five males as follows: length, 1.76-2.28 mm., width of head across the compound eyes, .476-.490 mm., length of antennal segments, III, .626-.680 mm., IV, .449-.517 mm., V, .476-.544 mm., VI, base, .109-.136 mm., unguis, .884-.966 mm., length of cornicles, .381-.408 mm., third segment of the antenna with 40-50 sensoria, fourth segment with 13-22 sensoria, fifth segment with 11-18 sensoria.

Oviparous female. (Plate I, figs. 19-21). The coloration of this form is much as in the apterous viviparous female. The body form is somewhat more broad than in the viviparous female. Head with broad antennal tubercles and armed with several hyaline, spatulate tipped hairs. Eyes reddish-brown, large. Antennae six-segmented about equal in length to the body. Third segment with 10-14 sensoria scattered over the basal three-fifths of the segment. Fourth segment without sensoria, the fifth and sixth with the usual ones near the apex and at the base of the unguis. Hind tibiae considerably swollen, with numerous small scattered sensoria.

Cornicles with about one-third their length reticulated. Cauda somewhat constricted above the middle with several curved, hyaline hairs.

Measurements of the oviparous female as follows: length, 2.72 mm., width of head across the eyes, .503 mm., length of antennal segments, I, .136 mm., II, .068 mm., III, .680 mm., IV, .476 mm., V, .503 mm., VI, base, .122 mm., unguis, .816 mm., length of cornicle, .639 mm., length of cauda, .340 mm.

TYPE LOCALITY: Gainesville, Florida.

TYPES: Holotype, alate viviparous female, from *Eupatorium incarnatum,* Oct. 1, 1928 (F 406-28), on slide with an immature apterous female. Morphotype, apterous viviparous female, same data as the holotype on slide with three alate viviparous females, an apterous viviparous female, and an immature alate female. Allotype, male, from *Eupatorium incarnatum,* Gainesville, Dec. 11, 1926. (F 173-26) on slide with morphotype oviparous female. Morphotype, oviparous female, same data and slide as allotype male. All of above types deposited in the U. S. National Museum Collection, Cat. No. 44300. Paratypes in the collection of the Entomology Department, Florida Agricultural Experiment Station and in that of the author. Types selected from a series of seventeen alate viviparous females, nine apterous viviparous females, fourteen males, and eight oviparous females. Type material collected by the author.

NOTES: This *Eupatorium* aphid is apparently rather closely related to *Tritogenaphis erigeronensis* and *T. eupatoricolens.* It differs from these species, however, in the following respects: the body is duller and darker green and the unguis of the antenna is proportionately much longer than in *erigeronensis.* This species has the cornicles consistently shorter than the third antennal segment, whereas in *erigeronensis* the cornicles are longer than the third antennal segment.

This species differs from *eupatoricolens* in coloration, the latter being brown. The cornicles of *eupatorifoliae* are definitely imbricated to the base, whereas in *eupatoricolens* the cornicles below the reticulated area are smooth or with but a faint suggestion of imbrication. The cauda in this species is quite dark and long and narrow, as contrasted with the yellow and relatively broad cauda of *eupatoricolens.*

Measurements of ten alate females indicate variations as follows: length, 1.76-3.16 mm., width of head through the compound eyes, .462-.503 mm., length of antennal segments, III, .653-.802 mm., IV, .476-.612 mm., V, .490-.558 mm., VI, base, .109-.136 mm., unguis, .843-1.061 mm., length of cornicles, .598-

.734 mm., third antennal segment with 25-35 sensoria, fourth segment always without sensoria.

RECORDS: *Eupatorium incarnatum*, Gainesville, Sept. 8, 1926 (F 146-26), (Bratley), Dec. 4, 1926 (F 172-26), Dec. 11, 1926 (F 173-26), Jan. 14, 1927 (F 177-27), Oct. 1, 1928 (F 406-28), Nov. 21, 1929 (F 551-29).

A PEPPER PEST NEW TO THE UNITED STATES

J. R. WATSON

In November, 1931, there was sent to the Experiment Station from Dade County, Fla., peppers infested with grubs or weevils. Due to the limited amount of the material, adults were not raised from these larvae, but in the fall of 1933 larger numbers were received from the County Agent of Dade County, and from these adults were raised. Specimens of these were sent to Prof. S. C. Bruner, Santiago De Las Vegas, Cuba, who states that they are identical with specimens in their collection identified by Mr. A. J. Mutchler of the American Museum of Natural History as *Cryptorhynchus cubae* Boh. According to Prof. Bruner, this is not a common pest in Cuba but has been observed attacking peppers in the provinces of Pinar del Rio and Havana. It is mentioned in Gundlach's "Contribucion a la Entomologia Cubana". Apparently it was not common in his time, as he says "I have not observed this species". He states that the pupae are formed inside of the hollow stems, and this stage requires from 10 to 12 days. Specimens were reared in cages in the laboratory at Gainesville by Dr. A. N. Tissot, and some observations made on their habits. The larvae are found in the entire length of the pepper plants, from the base to and even including the peduncles of the fruit, although, unlike the pepper weevils of the West, none were found in the peppers themselves. As stated by Gundlach, they pupate in the burrows in the stems. The plants received from Dade County were so highly infested as to be rendered commercially worthless. The County Agent states the depredations in some plantations of that County to be so severe as to discourage the planting of peppers, a crop which never seems to have been very extensively reared in that section. It has been reported only from the southern part of Dade County, south of Miami. In surveys of the section by Mr. George B. Merrill of the State Plant Board and Mr. F. S. Chamberlain of the U. S. Department of Agriculture, the weevils were found only in the southern part of Dade County. An observation made by Dr. Tissot in the laboratory would seem to suggest the only practical means of control, except that of promptly destroying all infested plants. He observed that the newly emerged adults fed on the outside of the plant, puncturing the petioles of the leaves which promptly withered and dropped. This habit would seem to offer the only chances of poisoning the weevils.

A NEW SPECIES AND VARIETY OF PLESIOTHRIPS (Thripidae—THYSANOPTERA)[1]

By J. G. WATTS

Plesiothrips andropogoni n. sp. (Plate II, figs. 1-3)

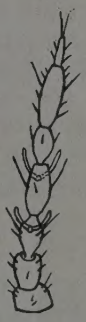
Female (macropterous).—Average length .935 mm. (.812 to 1.160 mm.). Color yellow; head straw yellow; thorax naples yellow, with margins and sutures tinted with deep chrome; basal abdominal segments much paler straw yellow, shading to naples yellow towards the posterior; trace of deep chrome on side margins of 9th and 10th abdominal segments; all legs only very slightly paler than head. Segments 1 and 2 of antennae concolorous with legs; 3 raw umber brown; 4 broccoli brown, basal sixth paler; 5, 6, and 7 sepia brown. (Nomenclature of Colors by Robert Ridgeway, Copyright 1885, Little, Brown & Co., Boston).

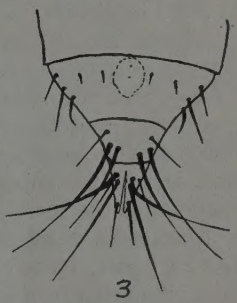
Head but little smaller than prothorax; slightly wider than long; cheeks weakly arched, almost parallel; a weak but noticeable constriction behind eyes. Posterior third of occiput weakly transversely striate. Five postocular bristles on each side, the total of ten bristles crudely semi-circularly arranged across the head with the free ends of the crescent pointing in a posterior direction. Middle pair largest and about equal in length to the first antennal segment. Eyes blackish, slightly protruding, together occupying about .6 the width of the head, margins fused with yellow; ocelli widely separated and placed well forward, the posterior pair opposite the anterior third of the eyes, bright chrome yellow with the inner crescents burnt sienna; ocellar bristles conspicuous, about equal in length to the 2nd antennal segment. A pair of rather small inconspicuous postantennal bristles anterior to the ocellar bristles. Maxillary palpi 3-segmented, segments rather weakly defined. Antennae twice as long as head. Relative lengths and widths of segments:

	1	2	3	4	5	6	7
Length:	14	18	21	25	18	28	13
Width:	16	13	10	10	10	10	4

[1] Technical Contribution No. 35 from the South Carolina Experiment Station, Clemson College, S. C.

Prothorax about .6 longer than head, a little longer than wide, sides parallel, roughly forming a rectangle; beset with several irregularly arranged inconspicuous pale yellow bristles; posterior angles each with two strong bristles. Mesothorax 1.4 times wider than prothorax, sides evenly arched. Length of





Explanation of Plate

Fig. 1—Head, prothorax and fore legs of female of *P. andropogoni.*
Fig. 2—Left antenna.
Fig. 3—End of abdomen of female of *P. andropogoni.*

fore wings 17 times their width at middle, reaching the 8th or 9th abdominal segment. Costa with 18 to 21 long spines in addition to the fringe hairs which number 12 to 16; fore vein with 13 to 16 and the hind vein with 11 to 14 weaker spines. Metathorax a little narrower than the mesothorax. All legs short and somewhat thickened and beset with numerous spines, those on inner surface of hind tibiae heavier.

Abdomen cylindrical; about 2.8 times as long as wide when segments are not distended; last three segments tapering abruptly into a sharp point. Ovipositor reduced. Tenth segment sulcate above throughout.

Measurements of holotype: Length .959 mm.; head, length .110 mm., width .119 mm.; prothorax, length .148 mm., width .127 mm.; mesothorax, length .112 mm., width .180 mm.; metathorax, length .105 mm., width .147 mm.; abdomen, length .490 mm. (1st segment is partially inserted in the metathorax, therefore, the length of the abdomen was measured from the posterior edge of the metathorax), width .180 mm.

Antennae:	1	2	3	4	5	6	7
Length (Microns):	24.5	31.5	36.8	43.8	31.5	49.0	22.8
Width (Microns):	29.8	22.8	17.5	17.5	17.5	17.5	7.0

Described from 21 females collected by the writer from common broom sedge (Andropogon sp.) as follows: Clemson College, Oconee County, S. C., 21 March 1931, one; November 29, 1933, three (elevation 600 to 850 ft.), 17 on top of Sassafrass mountain, Rocky Bottom, Pickens County, S. C., February 6, 1934 (elevation 3548 ft.).

Male unknown.

This is the second North American species and may be distinguished from its relative *P. perplexus* (Beach) by its decided yellow color throughout except antennal segments 5 to 7 which are brown and the wings which are gray-brown, by the close union of the head and prothorax, forming almost a continuous line, and by the small inconspicuous spines on the prothorax in contrast to the heavier and more conspicuous ones in perplexus.

Specimens collected in 75 per cent alcohol, soaked in terpineol for 24 hours, rinsed in 95 per cent alcohol 15 minutes to one hour, mounted in diaphane.

Type and paratypes in author's collection.

Plesiothrips andropogonis watsoni n. var.

Female (macropterous).—Average length 1.207 mm. (1.096 to 1.344 mm.). Color yellow; head straw yellow; thorax straw yellow with traces of deep chrome by transmitted light. Basal and mid abdominal segments straw yellow shading to naples yellow in distal segments. Legs concolorous with head. Antennal segments 1, 2, and basal half of 3 concolorous with head and legs; distal half of 3 and basal half of 4 slightly darker; distal half of 4 abruptly shading to yellowish brown which

continues into the basal third of 5; distal two-thirds of 5 and segments 6 and 7 sepia brown.

Head large, but little smaller than prothorax; slightly wider than long; a weak constriction behind eyes; cheeks parallel or almost.

Bristles on head and prothorax moderately heavy and conspicuous, more so than in *P. andropogoni.* All measurements greater and the coloration a little richer, otherwise the variety is the same as *andropogoni.*

Measurements of holotype: length, 1.096 mm.; head, length .123 mm.; width .135 mm.; prothorax, length .158 mm.; width .145 mm.; mesothorax, width .189 mm.; metathorax, width .166 mm.

Male unknown.

This variety may be distinguished from the species by its larger size, richer color, and the coloration of the antennae.

Upon the acquisition and examination of a larger series of this form, *watsoni* may be raised to specific rank.

Described from nine females collected by J. R. Watson from *Andropogon virginicus* at Gainesville, Florida as follows: one on 24 November 1933, two on 24 December 1933, one on 18 January 1934, and five on 20 February 1934.

The author is indebted to Professor J. R. Watson of the Florida Agricultural Experiment Station, in whose honor this variety is named, for the type material.

Type and two paratype slides in the collection of Professor J. R. Watson. One paratype slide in the writer's collection.

PERSONALS

Among recent visitors at Gainesville were James Zetek of the Canal Zone, Dr. Johannes Wille of Lima, Peru, and a group from Batum, U.S.S.R. interested in the citrus industry.

Dr. T. H. Hubbell is spending the summer in the Museum of the University of Michigan, and Prof. J. T. Creighton in study at Ohio State University.

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FRED WINTER WALKER

Fred Winter Walker was born in Richmond County, Georgia, March 22nd, 1892, son of George Beverly and Ann Elizabeth Walker. He attended the elementary and high school at Augusta, Ga. He moved to Macon in 1909. Mr. Walker in his early school days showed an intent interest in insects, and had a collection of butterflies before he was 10 years old. In 1914 he joined the Macon Volunteers and served with them on the Mexican Border in 1916. In November of 1917 he was sent over seas with the 151st Machine Gun Battalion. In France he participated in five major engagements. In 1919 he became located at Orlando, Fla. In 1922 he entered the University of Florida. During his senior year he was offered a position with the United Fruit Company at Santa Marta, Colombia, where he resided for two years, doing notable work on the insects attacking bananas. In 1927 he accepted a position with the Florida Agricultural Experiment Station, and was located in the laboratory for the study of pecan insects at Monticello. Here he did notable work on the insects of pecans, and published a bulletin on the shuck worm, and had worked out what appears to be a very satisfactory control for the nut case-bearer and leaf case-bearer of pecans at the time of his death.

Mr. Walker was an enthusiastic collector and student of entomology. It is said of him that he collected insects while under fire in France, earning the nickname of "Bugs", which he is still called by his fellow soldiers. He brought back from South America a very large insect collection from Colombia, and continued his work in Florida. He was an expert at locating larvae of

the cypress moth, *Cupressa*, and at the time of his death probably had more of this species than exists in all the collections of entomologists. He was apparently collecting food for this moth at the time of his death.

In addition to his bulletin on the shuckworm, Mr. Walker has contributed a number of articles to the proceedings of the Georgia-Florida Pecan Growers Association for their publication. He was much interested in Orthoptera, and in connection with Professor T. H. Hubbell of the Department of Biology of the University of Florida was the author of several new species.

ATHENA PELEUS (Sulger) New

ARGONUT PETREUS (Sulger) Old; TIMETES PETREUS (Cramer)
Pl. xxi. "The Butterfly Book", Holland.

ELLEN ROBERTSON-MILLER

On June 3, 1926 at Coronado Beach, Fla., a caterpillar of *Athena peleus* was found feeding on fig. It is the only larva of the species I have seen during my ten years in this section of the state. The length of the larva was one and one-half inches and its diameter was that of a slate pencil. It had three diamond shaped patches on the dorsum, light, and opalescent in color. The anterior diamond began on the fifth segment; a stiff black hair arose from a dull orange red tubercle at this point and the distinctive mark occurred at the posterior point of each triangle. There were three lateral obliques, the first starting low on the sixth segment and the last ending on the eleventh at the dorsal tubercle; each area was made up of a gray oval outlined in metallic blue with a black line above and below. Small ovals, similar in appearance, were seen on segments 2, 3, 4 and 5, but a dark spot occupied the place of the oval on the first segment, and there was a pair of dark spots on the reddish dorsum of the 1st, 2nd and 3rd segments. The head was bilobed and the rugosity of the epicranial surface was pronounced. Starting near the adfrontals and in line with the upper margin of the clypeus, a pair of rough spined welts, like raised cords went up over the face, one to each cranial apex, where a stiff slender projection arose having a length greater than that of the head. The organ seemed to be the continuation of the face marking.

The caterpillar ate well for a couple of days, then on the morning of June 6, it contracted and attached itself to the lid of the breeding cage. The red in the larva disappeared and the

body became light amber in color, with an iridescent sheen. On June 7, at nine-thirty A.M. a pale greenish-yellow pupa emerged and it was peculiar, due to the fact that it had a pair of lateral, black, branched spines standing out from its thorax and three rows of tubercles along the dorsum of the body. Those in the middle row each held an erect black spine, and together they formed a kind of defensive crest on the back of the pupa. The length of the chrysalis was three-fourths of an inch.

I was leaving that day for two weeks and could not carry a freshly emerged chrysalis, so I left it in the breeding cage. On June 20, I found the butterfly out but it had died and was somewhat frayed from its efforts to escape. At first I thought it was a *Papilioninae* because the hind wings were tailed like butterflies of the *Papilio* genus. Not only did the hind wing show one prolongation but two, the second much shorter, however. The upper surface of the wings and of the body had a golden-brown color; dark lines crossed both pairs of wings and this color bordered them. The under surface of the butterfly was light. This was especially true of the wings near the body and they were slightly opalescent. When folded at right angles to the back they simulated a brown leaf even to the mid rib, for one of the dark lines, reproduced on the under surface, carried with it a shadow line of blue and it extended from the apex of the fore-wing to the anal angle of the hind-wing.

The butterfly with a spread of two and one-third inches was identified by Dr. Kahl of Carnegie Museum in Pittsburgh, who kindly gave much time to looking up the bibliography on this insect. He found little had been reported about it except that in 17— the larva and chrysalis had been drawn and painted. The pictures illustrated an early book on *Lepidoptera* which I saw in the Museum library.

Cramer also has figured this butterfly.

The insect is a native of the West Indies, I believe, and is occasionally taken in Texas and southern Florida.

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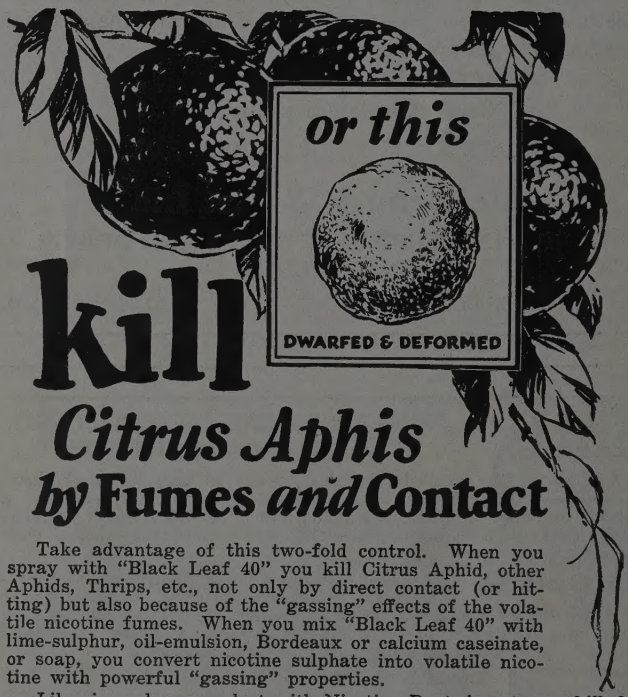

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